

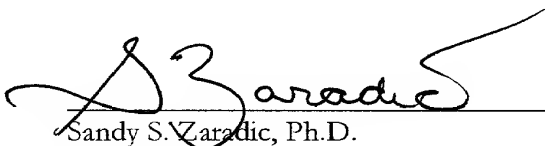
Applicant's Reference: **ID01152 US**

Title of Invention: **Hepatitis C Virus NS3 Helicase Fragments**

Applicants: **Weber, Patricia C.  
Reichert, Paul  
Madison, Vincent S.  
Wyss, Daniel  
Yao, Nanhua  
Liu, Dingjiang  
Gesell, Jennifer**

Sequence Listing Statement

The undersigned agent for applicant hereby declares that the information recorded on the diskette is identical in content to the information in the written Sequence Listing. The sequence listings do not go beyond the disclosure in the application as filed.

  
Sandy S. Zaradic, Ph.D.  
Patent Agent

## SEQUENCE LISTING

<110> Weber, Patricia C.  
 Reichert, Paul  
 Madison, Vincent S.  
 Wyss, Daniel  
 Yao, Nanhua  
 Liu, Dingjiang  
 Gesell, Jennifer

<120> Hepatitis C Virus NS3 Helicase Fragments

<130> ID01152 US

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<150> US 60/194,419

<151> 2000-04-04

<160> 16

<170> PatentIn Ver. 2.1

<210> 1

<211> 631

<212> PRT

<213> Hepatitis C virus

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Val	Gln	Ile	Val	Ser	Thr	Ala	Thr	Gln	Thr	Phe	Leu	Ala	Thr	Cys	Ile
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Asn	Gly	Val	Cys	Trp	Thr	Val	Tyr	His	Gly	Ala	Gly	Thr	Arg	Thr	Ile
	50					55					60				
Ala	Ser	Pro	Lys	Gly	Pro	Val	Ile	Gln	Met	Tyr	Thr	Asn	Val	Asp	Gln
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Asp	Leu	Val	Gly	Trp	Pro	Ala	Pro	Gln	Gly	Ser	Arg	Ser	Leu	Thr	Pro
			85						90					95	
Cys	Thr	Cys	Gly	Ser	Ser	Asp	Leu	Tyr	Leu	Val	Thr	Arg	His	Ala	Asp
			100				105						110		
Val	Ile	Pro	Val	Arg	Arg	Arg	Gly	Asp	Ser	Arg	Gly	Ser	Leu	Leu	Ser
		115					120					125			
Pro	Arg	Pro	Ile	Ser	Tyr	Leu	Lys	Gly	Ser	Ser	Gly	Gly	Pro	Leu	Leu
	130						135				140				
Cys	Pro	Ala	Gly	His	Ala	Val	Gly	Leu	Phe	Arg	Ala	Ala	Val	Cys	Thr
145					150					155					160
Arg	Gly	Val	Thr	Lys	Ala	Val	Asp	Phe	Ile	Pro	Val	Glu	Asn	Leu	Glu
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Thr	Thr	Met	Arg	Ser	Pro	Val	Phe	Thr	Asp	Asn	Ser	Ser	Pro	Pro	Ala
			180					185					190		

Val Pro Gln Ser Phe Gln Val Ala His Leu His Ala Pro Thr Gly Ser  
 195 200 205  
 Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr Lys  
 210 215 220  
 Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly Ala  
 225 230 235 240  
 Tyr Met Ser Lys Ala His Gly Val Asp Pro Asn Ile Arg Thr Gly Val  
 245 250 255  
 Arg Thr Ile Thr Thr Gly Ser Pro Ile Thr Tyr Ser Thr Tyr Gly Lys  
 260 265 270  
 Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile Ile  
 275 280 285  
 Cys Asp Glu Cys His Ser Thr Asp Ala Thr Ser Ile Leu Gly Ile Gly  
 290 295 300  
 Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu  
 305 310 315 320  
 Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Val Pro His Pro Asn Ile  
 325 330 335  
 Glu Glu Val Ala Leu Ser Thr Thr Gly Glu Ile Pro Phe Tyr Gly Lys  
 340 345 350  
 Ala Ile Pro Leu Glu Val Ile Lys Gly Gly Arg His Leu Ile Phe Cys  
 355 360 365  
 His Ser Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Val Ala Leu  
 370 375 380  
 Gly Ile Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val Ile  
 385 390 395 400  
 Pro Thr Asn Gly Asp Val Val Val Val Ala Thr Asp Ala Leu Met Thr  
 405 410 415  
 Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Cys Val  
 420 425 430  
 Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu Thr  
 435 440 445  
 Thr Thr Leu Pro Gln Asp Ala Val Ser Arg Thr Gln Arg Arg Gly Arg  
 450 455 460  
 Thr Gly Arg Gly Lys Pro Gly Ile Tyr Arg Phe Val Ala Pro Gly Glu  
 465 470 475 480  
 Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys Tyr Asp  
 485 490 495  
 Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala Glu Thr Thr Val Arg  
 500 505 510  
 Leu Arg Ala Tyr Met Asn Thr Pro Gly Leu Pro Val Cys Gln Asp His  
 515 520 525  
 Leu Glu Phe Trp Glu Gly Val Phe Thr Gly Leu Thr His Ile Asp Ala

530                      535                      540  
 His Phe Leu Ser Gln Thr Lys Gln Ser Gly Glu Asn Phe Pro Tyr Leu  
 545                      550                      555                      560  
 Val Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro Pro Pro  
                     565                      570                      575  
 Ser Trp Asp Gln Met Trp Lys Cys Leu Ile Arg Leu Lys Pro Thr Leu  
                     580                      585                      590  
 His Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Ala Val Gln Asn Glu  
                     595                      600                      605  
 Val Thr Leu Thr His Pro Ile Thr Lys Tyr Ile Met Thr Cys Met Ser  
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 Ala Asp Leu Glu Val Val Thr  
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 <212> PRT  
 <213> Artificial Sequence

<220>  
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<400> 2  
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<210> 3  
 <211> 148  
 <212> PRT  
 <213> Hepatitis C virus

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                     20                    25                    30  
 Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr Lys  
                     35                    40                    45  
 Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly Ala  
                     50                    55                    60  
 Tyr Met Ser Lys Ala His Gly Val Asp Pro Asn Ile Arg Thr Gly Val  
                     65                    70                    75                    80  
 Arg Thr Ile Thr Thr Gly Ser Pro Ile Thr Tyr Ser Thr Tyr Gly Lys  
                     85                    90                    95  
 Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile Ile  
                     100                    105                    110  
 Cys Asp Glu Cys His Ser Thr Asp Ala Thr Ser Ile Leu Gly Ile Gly  
                     115                    120                    125

Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu  
 130 135 140

Ala Thr Ala Thr  
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<210> 4  
 <211> 142  
 <212> PRT  
 <213> Hepatitis C virus

<400> 4  
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Val Ala Leu Ser Thr Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile  
 20 25 30

Pro Leu Glu Val Ile Lys Gly Gly Arg His Leu Ile Phe Cys His Ser  
 35 40 45

Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Val Ala Leu Gly Ile  
 50 55 60

Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr  
 65 70 75 80

Asn Gly Asp Val Val Val Val Ala Thr Asp Ala Leu Met Thr Gly Phe  
 85 90 95

Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Ser Asp Gly Lys  
 100 105 110

Pro Gln Asp Ala Val Ser Arg Thr Gln Arg Arg Gly Arg Thr Gly Arg  
 115 120 125

Gly Lys Pro Gly Ile Tyr Arg Phe Val Ala Pro Gly Glu Arg  
 130 135 140

<210> 5  
 <211> 288  
 <212> PRT  
 <213> Hepatitis C virus

<400> 5  
 Gly Ser His Met Ser Pro Val Phe Thr Asp Asn Ser Ser Pro Pro Ala  
 1 5 10 15

Val Pro Gln Ser Phe Gln Val Ala His Leu His Ala Pro Thr Gly Ser  
 20 25 30

Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr Lys  
 35 40 45

Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly Ala  
 50 55 60

Tyr Met Ser Lys Ala His Gly Val Asp Pro Asn Ile Arg Thr Gly Val  
 65 70 75 80

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Arg Thr Ile Thr Thr Gly Ser Pro Ile Thr Tyr Ser Thr Tyr Gly Lys
      85                      90                      95
Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile Ile
      100                      105                      110
Cys Asp Glu Cys His Ser Thr Asp Ala Thr Ser Ile Leu Gly Ile Gly
      115                      120                      125
Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu
      130                      135                      140
Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Val Pro His Pro Asn Ile
      145                      150                      155                      160
Glu Glu Val Ala Leu Ser Thr Thr Gly Glu Ile Pro Phe Tyr Gly Lys
      165                      170                      175
Ala Ile Pro Leu Glu Val Ile Lys Gly Gly Arg His Leu Ile Phe Cys
      180                      185                      190
His Ser Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Val Ala Leu
      195                      200                      205
Gly Ile Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val Ile
      210                      215                      220
Pro Thr Asn Gly Asp Val Val Val Val Ala Thr Asp Ala Leu Met Thr
      225                      230                      235                      240
Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Ser Asp
      245                      250                      255
Gly Lys Pro Gln Asp Ala Val Ser Arg Thr Gln Arg Arg Gly Arg Thr
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Gly Arg Gly Lys Pro Gly Ile Tyr Arg Phe Val Ala Pro Gly Glu Arg
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<210> 6
<211> 241
<212> PRT
<213> Hepatitis C virus

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<400> 6
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      20                      25                      30
Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr Lys
      35                      40                      45
Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly Ala
      50                      55                      60
Tyr Met Ser Lys Ala His Gly Val Asp Pro Asn Ile Arg Thr Gly Val
      65                      70                      75                      80

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<210> 7
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide

<400> 7
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<210> 8
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Peptide

<400> 8
Arg Gly Ser Thr
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*L. v. l.*

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Peptide

<400> 9  
Arg Gly Pro Gly  
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<210> 10  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Peptide

<400> 10  
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<210> 11  
<211> 4  
<212> PRT  
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<400> 11  
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<210> 12  
<211> 4  
<212> PRT  
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<400> 12  
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<210> 13  
<211> 4  
<212> PRT  
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<220>  
<223> Description of Artificial Sequence: Peptide

<400> 13  
Ala Asp Gly Ser  
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<210> 14  
<211> 4  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Peptide

<400> 14  
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<210> 15  
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33

<210> 16  
<211> 33  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Primer

<400> 16  
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33